

REMARKS**I. General**

The issues outstanding in the instant application are as follows:

- Claims 1-6 stand rejected under 35 U.S.C. 102(e) as anticipated by He et al., U.S. Pat. No. 6,621,067 (hereinafter *He*);
- Claims 20-22 stand rejected under 35 U.S.C. 102(e) as anticipated by Suh et al., U.S. Pat. Pub. No. 2002/0109901 (hereinafter *Suh*);
- Claims 10-16 stand rejected under 35 U.S.C. §103(a) as unpatentable over *He* in view of Otsuka et al., U.S. Pat. No. 5,841,557 (hereinafter *Otsuka*);
- Claims 17-19 are objected to as being dependent upon a rejected base claim; and
- Claims 7-9 are not addressed by the Office Action.

Applicant hereby traverses the outstanding rejections of the claims, and requests reconsideration and withdrawal of the outstanding rejections in light of the remarks contained herein. Claims 1-22 remain pending in this application.

II. All claims not addressed by the Office Action

Although claims 7-9 are indicated as rejected in the Office Action Summary, independent claim 7 and its dependent claims, 8 and 9, are not specifically addressed within the body of the Office Action. In a phone conference between the Examiner and Applicant's below indicated counsel, the Examiner indicated that claims 7-9 should be considered rejected under the same rational as claims 20-22, and that the omission of claims 7-9 from the rejection of claims 20-22 appearing on page 3 of the Office Action should be considered a typographical error. Therefore, Applicant will endeavor below to address claims 7-9 consistent with this indication.

However, Applicant respectfully points out that the rejection of claims 7-9 does not comport with Office policy. Specifically, the Examiner is directed that "[i]n accordance with

the patent statute, ‘Whenever, on examination, any claim for a patent is rejected , or any objection . . . made’, notification of the reasons for rejection and/or objection together with such information and references as may be useful in judging the propriety of continuing the prosecution (35 U.S.C. 132) should be given,” M.P.E.P. § 707. As such the Examiner has not “clearly articulate[d] any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity,” M.P.E.P. § 706. Applicant therefore requests that the Examiner set forth the grounds for rejection with respect to claims 7-9 in a non-final Office Action, so that Applicant may have a full and fair opportunity to explore the patentability of these claims.

III. Rejections under 35 U.S.C. § 102(e)

Claims 1-6 are rejected under 35 U.S.C. 102(e) as anticipated by *He* and claims 20-22 (and 7-9) are rejected as anticipated by *Suh*. Applicant respectfully traverses these rejections for the reasons advanced below.

The cited reference does not teach all claimed limitations.

It is well settled that to anticipate a claim, a reference must teach every element of the claim, see M.P.E.P. § 2131. Moreover, in order for a reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he elements must be arranged as required by the claim,” see M.P.E.P. § 2131, citing *In re Bond*, 15 US.P.Q.2d 1566 (Fed. Cir. 1990). Furthermore, in order for a reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim,” see M.P.E.P. § 2131, citing *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989). Applicant respectfully asserts that the rejections do not satisfy one or more of these requirements, as detailed below.

A. Claims 1-6

Claim 1 recites:

periodically changing said SOP of said polarization-scrambled optical signal with time, such that said periodically changing polarization-scrambled optical signal covers approximately an

entire Poincaré sphere surface during each time period of said periodic changing (emphasis added)

Without admitting that *He* teaches other elements alleged to be taught by the Office Action, Applicant respectfully asserts that *He* fails to teach the above recited element. The Office Action indicates that *He* teaches the above recited element in line 67 of column 9 through line 3 of column 10. However, the cited portion of *He* only teaches:

Using a polarization controller, the SOP of the light from a light source 64 is varied in such a way as to cover, in time, substantially all of the points on the Poincaré sphere.
(Emphasis added.)

Thus, *He* does not teach the claimed “periodically changing said SOP of said polarization-scrambled optical signal with time, such that said periodically changing polarization-scrambled optical signal covers approximately an entire Poincaré sphere surface during each time period of said periodic changing.” *He* only teaches that the SOP of the light from a light source is varied in such a way as to eventually cover substantially all of the points on the Poincaré sphere. Therefore, Applicant respectfully asserts that at least for the above reason independent claim 1 is patentable over the 35 U.S.C. § 102 rejection of record. Furthermore, there are great differences between claim 1 and the art of record, and a person of ordinary skill in the art considering the prior art would not find these differences obvious.

Claims 2-6 ultimately depend from independent claim 1, and thus each of claims 2-6 inherits all limitations of claim 1. Therefore, for at least the reasons advanced above in addressing the anticipation rejection of claim 1, each of claims 2-6 set forth features and limitations not recited by *He*. Hence, Applicant respectfully asserts that claims 2-6 are also patentable over the 35 U.S.C. § 102 rejection of record.

B. Claims 20-22 (and claims 7-9)

1. Relied Upon Reference is NOT prior art

The present application claims priority to a provisional application filed March 16, 2001, which provides full support for the subject matter disclosed and claimed in the present application. The reference cited in rejecting claims 20-22 (and 7-9), *Suh*, is a published U.S.

patent application having a filing date of August 15, 2001, and that claims the benefit of provisional patent applications having filing dates of August 18, 2000 and September 7, 2000. It appears that the Examiner has used the dates of the provisional patent applications as the § 102(e) date of *Suh*, which seems consistent with the *Examination Guidelines for 35 U.S.C. § 102(e), as amended by the American Inventors Protection Act of 1999, and further amended by the Intellectual Property and High Technology Technical Amendments Act of 2002, and 35 U.S.C. § 102(g)* (see e.g., Section IV "Examination Procedures under 35 U.S.C. §§ 102(e) and 374" thereof).

However, Applicant respectfully submits that only the subject matter that was actually present in at least one of the provisional patent applications (referred to hereafter as "*Suh Provisionals*") is afforded the earlier dates of August 18, 2000 or September 7, 2000. M.P.E.P. § 2136.03 provides that the 35 U.S.C. § 102(e) critical reference date of a U.S. application publication entitled to the benefit of the filing date of a provisional application under 35 U.S.C. § 119(e) is the filing date of the provisional application "if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. § 112, first paragraph." The Examiner has not provided copies of the *Suh Provisionals* and has not indicated where in the *Suh Provisionals* support is provided for the portions of *Suh* cited in the Office Action. Thus, Applicant respectfully asserts that the relied upon portions of *Suh* are not prior art under 35 U.S.C. § 102(e), unless and until the Examiner can show support in the *Suh Provisionals* for the relied upon teachings of *Suh*. Therefore, Applicant respectfully requests that the Examiner specifically identify the portions of the *Suh Provisionals* that provides the cited teachings of *Suh*. Otherwise, Applicant requests that the rejections of claims 20-22 (and 7-9) be withdrawn, as the relied upon teachings of *Suh* are not proper prior art under 35 U.S.C. § 102(e).

2. The cited reference does not teach all claimed limitations.

Claims 7 and 20 each recites:

a first optical element coupled to said first polarization controller and operable to receive and to cause a fixed polarization dependent loss (PDL) in said first intermediate optical signal to produce a second intermediate optical signal;

and

a second optical element substantially identical to said first optical element, said second optical element being operable to receive and to cause a fixed polarization dependent loss (PDL) in said third intermediate optical signal to produce an output optical signal

Applicant respectfully asserts that *Suh* fails to teach at least the above recited elements. The Office Action indicates that birefringent elements 758 of FIGURE 16A of *Suh* teaches the above recited elements. However, the description of birefringent elements 758 appearing in paragraph 141 of *Suh* only states:

PMD generator [754] can include two or more birefringent elements 758, such as polarization maintaining fibers, and intermediate polarization transformer 756.

Suh does not teach the claimed substantially identical first or second elements operable to receive and to cause a fixed polarization dependent loss in respective intermediate optical signals to produce a subsequent (intermediate) optical signal. *Suh* in paragraph 53 describes birefringent elements, such as such as highly birefringent fiber, as providing retardation, but not a fixed polarization dependent loss. Therefore, Applicant respectfully asserts that at least for the above reason independent claims 7 and 20 are patentable over the 35 U.S.C. § 102 rejection of record. Furthermore, there are great differences between each of claims 7 and 20 and the art of record, and a person of ordinary skill in the art considering the prior art would not find these differences obvious.

Claims 8 and 9 each ultimately depends from independent claim 7, and thus each of claims 8 and 9 inherit all limitations of claim 7. Claims 21 and 22 each depend directly from independent claim 20, and thus each of claims 21 and 22 inherit all limitations of claim 20. Therefore, for at least the reasons advanced above in addressing the anticipation rejection of claims 7 and 20, each of claims 8, 9, 21 and 22 set forth features and limitations not recited by *Suh*. Hence, Applicant respectfully asserts that claims 8, 9, 21 and 22 are also patentable over the 35 U.S.C. § 102 rejection of record.

IV. Rejections under 35 U.S.C. § 103(a)

Claims 10-16 are rejected under 35 U.S.C. § 103(a) as unpatentable over *He* in view of *Otsuka*. Applicant respectfully traverses these rejections for the reasons advanced below.

A Prima Facie case of obviousness has not been established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. § 2143. Without conceding the second criterion, Applicant respectfully asserts that the rejection does not satisfy the first and third criteria.

A. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *He* does not teach "transmitting the ancillary wavelength with a plurality of data-modulated wavelengths." The Office Action attempts to cure this deficiency by introducing *Otsuka*, which the Office Action alleges to teach "transmitting a continuous-wave ancillary wavelength substantially central relative to a plurality of data-modulated wavelengths." However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 10 recites:

transmitting a continuous-wave ancillary wavelength
substantially central relative to a plurality of data-modulated
wavelengths through said communication system together with
said plurality of data-modulated wavelengths

The Office Action indicates that *Otsuka* teaches this element at column 4, lines 5-8 and at column 7, lines 32-36. The Office Action also states that "the ancillary wavelength can be any one of 1-1 through 1-N wavelengths in fig. 1, whichever is the 'aimed' channel." However Applicant respectfully points out that the "aimed" channel described in *Otsuka* is a channel which is the subject of scrambling by a respective polarization scrambler," see

column 7, lines 31-32. Further, 1-1 to 1-N of FIGURE 1 are described at column 7, lines 11-13, as the signal light transmission sections that transmit a plurality of signal lights for a plurality of channels to be multiplexed together. Therefore, Applicant respectfully asserts that *Otsuka* is silent concerning transmitting any sort of ancillary wavelength, particularly transmitting an ancillary wavelength as substantially central, relative to a plurality of data-modulated wavelengths, as recited in claim 20. Nor does *Otsuka* teach or suggest transmitting an ancillary wavelength (or anything else) together with its plurality of data-modulated wavelengths.

As the Office Action admits *He* does not teach “transmitting the ancillary wavelength with a plurality of data-modulated wavelengths.” Thus, Applicant fails to understand how *He* can be interpreted as disclosing claim 10 element “scrambling the SOP in said continuous-wave ancillary wavelength periodically in time” (emphasis added) as alleged by the Office Action. The only “wavelength” dealt with in *He* appears to be a primary data wavelength, or the like. In other words, Applicant believes *He* fails to teach or suggest an ancillary wavelength as recited in claim 20.

Similarly, Applicant fails to understand how *He* can be interpreted as disclosing claim 10 element “monitoring in real time the instantaneous value said PDL in said continuous-wave ancillary wavelength”, much less “adjusting said at least one adjustable polarization controller in response to said real-time monitored instantaneous PDL value [in said continuous-wave ancillary wavelength],” as alleged by the Office Action, since as the Office Action admits *He* does not teach “transmitting the ancillary wavelength with a plurality of data-modulated wavelengths” and *He* appears to be silent concerning any sort of ancillary wavelength.

Additionally, the Office Action cites column 10, line 5, as teaching “monitoring in real time the instantaneous value said PDL in said continuous-wave ancillary wavelength.” The Office Action also cites column 7, lines 55-58, as teaching “adjusting said at least one adjustable polarization controller in response to said real-time monitored instantaneous PDL value.” However, the discussion in the paragraph containing line 5 of column 10, and the paragraph beginning on line 55 of column 7, discusses determining response axes of a polarization controller and gluing a photodetector to a bracket or holder in response to the

determined axes. Therefore, Applicant fails to understand how these passages can be read as teaching, or even suggesting monitoring the instantaneous PDL value of an ancillary wavelength in real time, or adjusting a polarization controller in response to a real-time monitored instantaneous PDL value.

For at least the reasons advanced above Applicant respectfully asserts that the combination of *He* and *Otsuka*, as presented by the Office Action, fails to teach or suggest various elements of independent claim 10. Therefore, Applicant respectfully asserts that for the above reasons independent claim 10 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Claims 11-16 ultimately depend from independent claim 10, and thus each of claims 11-16 inherit all limitations of claim 10. Therefore, for at least the reasons advanced above in addressing the obviousness rejection of claim 10, each of claims 11-16 sets forth features and limitations not recited by the combination of *He* and *Otsuka*. Thus, Applicant respectfully asserts that claims 11-16 are also patentable over the 35 U.S.C. § 103(a) rejection of record.

B. The Office Action does not provide the requisite motivation.

As noted above, the Office Action admits that *He* does not teach “transmitting the ancillary wavelength with a plurality of data-modulated wavelengths.” The Office Action attempts to cure this deficiency by introducing *Otsuka*, which the Office Action alleges to teach “transmitting a continuous-wave ancillary wavelength substantially central relative to a plurality of data-modulated wavelengths.” The motivation for making the combination was presented as follows:

It would have been obvious ... to transmit the ancillary wavelength as disclosed by *He* with a plurality of data-modulated wavelengths in a communications system, as indicated by *Otsuka*, in order to manage and compensate for deterioration of signals due to negative polarization effects.

It is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness, M.P.E.P. § 2143.01. Whereas, as pointed out above, *He* does not teach or suggest use of an ancillary wavelength, it seems that

the motivation provided by the office action is merely a statement that the references can be combined, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. § 2143.01. As no valid suggestion has been made as to why a combination of *He* and *Otsuka* is desirable, absent the application of impermissible hindsight, the rejection of claims 10-16 should be withdrawn.

V. **Conclusion**

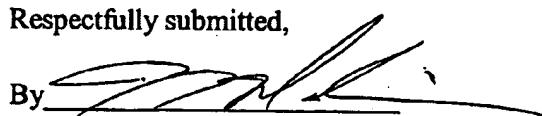
The Examiner is thanked for the indication that claims 17-19 include allowable subject matter. However, for all the reasons given above, Applicant submits that the other pending claims also distinguish over the prior art of record under 35 U.S.C. §§ 102 and 103. Accordingly, Applicant submits that this application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge Deposit Account No. 06-2380, under Order No. 51519/P001US/10203244, from which the undersigned is authorized to draw.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that the attorney can helpful in resolving any remaining issues or can otherwise be helpful in expediting prosecution of the present application.

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Respectfully submitted,

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